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Marketing Charges for HEAD LETTUCE Sold in Cleveland, Ohio

FEBRUARY-JUNE 1950

by
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Agricultural Economist

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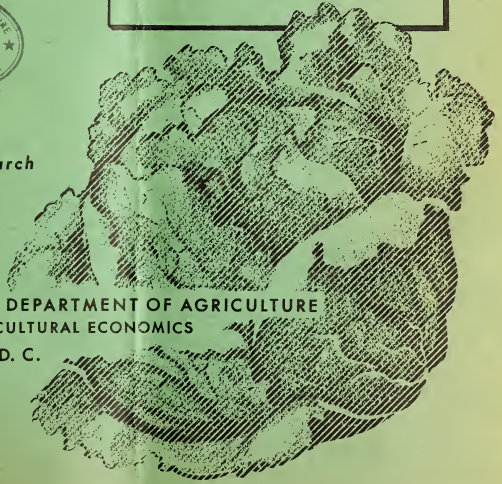

Marketing Research Report No. 6

UNITED STATES DEPARTMENT OF AGRICULTURE
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Assistance in developing procedures for obtaining the information in this bulletin was provided by members of the National League of Wholesale Fresh Fruit and Vegetable Distributors, United Fresh Fruit and Vegetable Association, and National Association of Food Chains, and by the cooperating retailers and wholesalers in Cleveland. Representatives of the Market News Service and other divisions of the Fruit and Vegetable Branch of the Production and Marketing Administration also gave advice as to procedures. The author wishes to acknowledge the assistance of H. Wayne Bitting and D. B. DeLoach, under whose direction this study was conducted.

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MARKETING CHARGES FOR HEAD LETTUCE SOLD IN CLEVELAND, OHIO

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INTRODUCTION

This is a report of the charges made at each step in marketing lettuce. Production of lettuce has almost doubled during the last 20 years, and it is now one of the more important vegetables marketed in the United States. The report takes into consideration the services by marketing agencies, and the channels through which lettuce moves from producing areas to consumers in Cleveland.

The report provides specific information on marketing margins for lettuce according to size of head and producing area. Pricing policies and margins are shown for retail stores according to their methods of buying produce. Data in sufficient detail to relate margins and services are not provided by the regular price-reporting agencies. For those interested in improving the marketing of farm products, exact information of the type in this report is a necessary prerequisite to studies of marketing efficiency.

Facts such as these should be useful to buyers and sellers of fresh fruits and vegetables. Likewise, farmers and shippers may find that the information will help them to become better acquainted with marketing channels,

pricing practices, and the margins taken by handlers and service agencies that play a part in the assembling and distribution of products from farm to consumers. The report also provides farmers and shippers a sound basis for appraising the charges made by marketing agencies for services performed.

With these needs in view, the Bureau of Agricultural Economics, during 1949 and 1950, obtained data on marketing margins, costs, and trade practices for the more important fresh fruits and vegetables sold in Cleveland, Ohio. Similar studies were carried out in Denver, Colo., Pittsburgh, Pa., and Charlotte, N.C. This report on lettuce is one of a series of commodity reports to be issued on the results of these studies.

SUMMARY

1. Marketing margins for California-Arizona lettuce have been determined from f.o.b. shipping point through each step in the marketing process to consumers in Cleveland. The period was from February through June 1950. For size-48 head lettuce these marketing charges averaged $4.85 a crate, or 61 percent of the consumer's dollar. For size 60, marketing charges amounted to $4.74 a crate, or 63 percent of the consumer's dollar. These charges do not include charges for services at shipping point.

2. Lettuce from California and Arizona accounted for 95 percent of the almost 125,000 heads of lettuce sold from February through June 1950 in the stores that formed the sample of the Cleveland market.

3. The retail selling price for size-48 lettuce averaged 17 cents a head during the 5-month period of the study. For the smaller size 60, it averaged 13 cents a head. For both sizes the selling price during the one season studied was lowest during March and highest during May.

4. Retail margins for the sample stores in Cleveland averaged $1.93 a crate for size-48 California-Arizona lettuce and $1.85 a crate for size 60. For both size 48 and size 60 this amounted to a retail margin of 24.4 percent of the consumer's dollar. However, monthly retail margins varied considerably among stores.

5. Waste and spoilage at the retail level for California-Arizona lettuce handled by the sample stores in this study amounted to 3.73 percent of the volume purchased for the period February through June 1950. This does not include trimming loss.

6. Chain food stores sold 60 percent of the quantity of California-Arizona lettuce in the sample stores and independently operated stores sold 40 percent.

7. The wholesale margin averaged about 9 percent of the consumer's dollar for both sizes of California-Arizona lettuce.

8. The average total charge for transporting lettuce from points in California and Arizona to the terminal market in Cleveland was $2.03 per crate. This margin includes freight, icing, and the Federal transportation tax.

9. The quantity of California and Arizona lettuce sold in the sample stores was staggered in such a way that a relatively continuous market supply was provided during the period of the study. Total quantity sold in the sample stores from these States ranged from a high in March of 26,000 heads to a low in April of 21,300 heads.

10. No constant percentage or dollar and cents margin was followed by the sample stores. Both percentage margins and dollars and cents margins varied within individual stores as well as among stores.

11. The 20 retail stores in the study were classified into three groups, depending on their method of buying lettuce. 1/ Group I chain stores, those that bought predominantly in carload lots, obtained the lowest retail margins for sizes 48 and 60 California-Arizona lettuce during the 5 months. Group III, medium to large independents, that bought from initial receivers and secondary handlers in the wholesale market, took the highest retail margin for size-48 lettuce, and group IV, independent stores that bought from service wholesalers and trucker jobbers, obtained the highest margin for size-60 lettuce.

SOURCE OF SUPPLY

In the 20 stores that formed the sample for study in Cleveland, 123,865 heads of lettuce were sold from February through June 1950. Western lettuce, that is, California and Arizona lettuce combined, accounted for 95.4 percent of all lettuce sold in the sample stores.

Slightly more than two-thirds of the heads of lettuce sold in the sample stores during the study were size 48. 2/ Size 60 accounted for less than a third, and miscellaneous sizes made up the remainder (table 1).

1/ The three groups are referred to throughout this study as groups I, III, and IV, in order to facilitate comparisons with corresponding groups in a similar study conducted in Pittsburgh, Pa. Group II was established to cover chain stores whose purchases were made directly from the initial receivers in the terminal market. None of the stores included in the Cleveland study fell into this category; but some of the stores in the Pittsburgh study were in group II.

2/ Size indicates the actual number of heads of lettuce packed in a standard crate. Size 48's are commonly known in the trade as 4's and size 60's are known as 5's, meaning 4 and 5 dozen per crate, respectively.

Table 1. - Quantity of head lettuce sold in 20 sample retail stores in Cleveland, by State of origin and by size, February-June 1950

State of origin	Percentage of quantity sold, by size			
	48	60	Other	Total
	Percent	Percent	Percent	Percent
Arizona	13.14	11.18	0.03	24.35
California	51.78	18.73	.56	71.07
Others 1/	2.58	.79	.06	3.42
Unidentified	.49	.07	.59	1.16
Total	67.99	30.77	1.24	100.00

1/ Others include the following States: Ohio, New York, New Jersey, Florida and Texas.

RETAIL PRICE

The retail selling price for size-48 lettuce sold during the 5-month period averaged 17.1 cents a head. This exceeded the price for size 60 by an average of 4 cents a head. Lettuce from California averaged 16.3 cents a head from February through June 1950 (table 2). This was the highest average price per head of any producing area. Lettuce from Arizona averaged 14.7 cents a head during the 5 months. Slightly less than three-fourths of California's volume and approximately half of Arizona's volume were size 48. The 5-month average selling price for Arizona lettuce was lower than that of California lettuce for two reasons: (1) Arizona's sales were relatively low during periods of high prices, and (2) size-60 lettuce predominated in that from Arizona, while California lettuce was mostly size 48. However, no significant difference was noted in the selling price as between California and Arizona lettuce, sizes 48 and 60, during any given month (tables 10 and 11, Appendix). All lots of lettuce from the sample stores were sold on a "per head" basis. 3/ No pound sales were recorded.

3/ A lot represents a specific purchase of any quantity of a certain size of lettuce by a retailer from a wholesaler during a given day. Such a purchase results in an individual lot having a common State of origin, grade, size, and unit cost.

Table 2. - Average selling price of head lettuce sold in 20 sample retail stores in Cleveland, by State of origin and by size, February-June 1950

State of origin	Price per head, by size			
	48	60	Other	Average
	Cents	Cents	Cents	Cents
Arizona	16.4	12.7	19.7	14.7
California	17.3	13.3	21.1	16.3
Others 1/	16.4	14.5	15.1	15.6
Unidentified	16.7	13.3	15.0	15.9
Average	17.1	13.1	17.9	15.9

1/ Others include the following States: Ohio, New York, New Jersey, Florida and Texas.

SEASONAL PATTERN OF LETTUCE SALES

The quantity of lettuce sold in the 20 sample stores from February through June showed no definite trend. The monthly quantity sold varied considerably throughout the period (table 3).

Table 3. -Quantity sold and selling price per head for all lettuce sold in 20 sample retail stores in Cleveland, by months, February-June 1950

Months	Quantity sold	Selling price per head
	1,000 heads	Cents
February	24.9	14.7
March	27.5	13.3
April	22.6	15.4
May	26.1	19.4
June	22.8	16.8
Total	123.9	15.9

The average monthly retail price for all lettuce sold by the sample stores was relatively stable during February, March, and April. It reached a peak in May and declined in June. In general, the selling price apparently responded very little to changes in the quantity on the market. Perhaps during March some degree of response was evident, because it was the month of highest volume and lowest selling price. The higher prices during May were probably caused by a railroad strike that month. Inasmuch as wholesalers were unable to replenish their inventories during the strike, the price rose abnormally as retail supplies diminished. As the data are averages for each month, they do not reveal the greater price fluctuations within the month during the strike.

Arizona's volume found in these stores was almost an exact complement to the California volume for the same period (fig. 1).

The relative proportions of sizes 48 and 60 head lettuce varied from month to month. Of the number of heads sold during the 5 months of the study, approximately two-thirds were size 48 and one third was size 60 (fig. 2).

MARGINS BETWEEN SHIPPING POINT AND CONSUMER

Average marketing charges for moving a crate of lettuce from f.o.b. shipping point in California or Arizona to consumers in Cleveland were $4.85 for size 48 and $4.74 for size-60 lettuce. These marketing charges were the equivalent of 61.2 percent of the consumer's dollar spent for size 48, and 62.6 percent of the consumer's dollar spent for size-60 lettuce. The services at shipping point are not included in these marketing charges, although these charges would have been desirable in order to reveal the margins from the producer through each step in the marketing process to the consumer.

Distribution of the average realized retail price from the sale of a crate of sizes 48 and 60 lettuce is shown according to functions in figure 3 and table 4. These functions include (1) retailing, (2) wholesaling, (3) brokerage, (4) transporting service from f.o.b. shipping point to terminal market, and (5) services performed by growers and shippers prior to establishing the f.o.b shipping-point price.

Retail Margin

The retail margin for the sample stores in Cleveland averaged $1.93 a crate for size-48 California-Arizona lettuce and $1.85 a crate for size 60 (fig.3). These margins were realized from the sale of 46.2 heads of lettuce that were merchantable at retail of an original crate of 48 heads, and 57.8 heads of an original crate of 60 heads. Waste and spoilage, as reported here, represent the throw-out loss that occurs at the retail level. The retailer bought the entire crate but received payment only from the salable lettuce. (This does not include trimming loss). The average retail

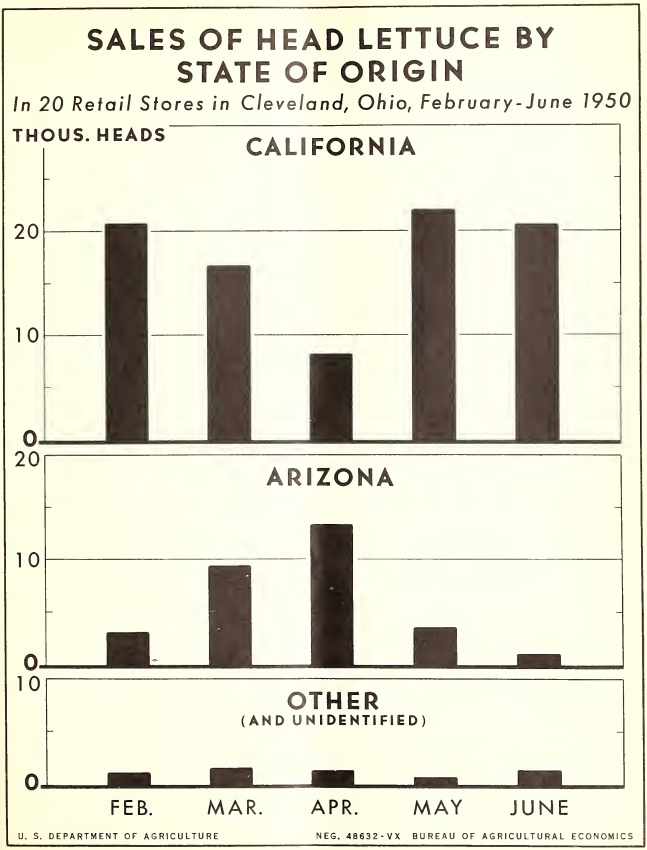
SALES OF HEAD LETTUCE BY STATE OF ORIGIN
In 20 Retail Stores in Cleveland, Ohio, February-June 1950
THOUS. HEADS
CALIFORNIA
20
10
0
ARIZONA
20
10
0
OTHER
(AND UNIDENTIFIED)
10
0
FEB.
MAR.
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Figure 1.

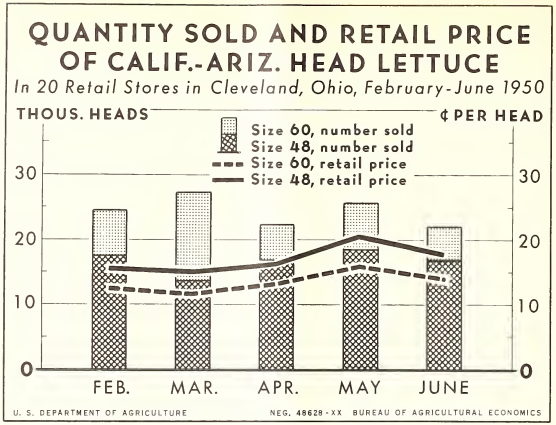

Figure 2.

margin taken by the stores for size 48 and size 60 lettuce combined amounted to 24.4 percent of the consumer's dollar. This represented a gross retail margin of 4.2 cents a head for size 48 and 3.2 cents a head for size 60 for the 5 months from February through June 1950. The average retail margin, whether measured in terms of cents a head or percentage of retail selling price, was not typical of the margins for individual store groups for any one month (table 5). Differences occurred among the margins taken by individual groups of stores as well as among months and between sizes of heads (tables 12 and 13, Appendix).

Retail stores were grouped according to their method of buying lettuce. Group I consisted of those stores whose purchases were made predominantly in carload lots. This included six chain-store units. Group II comprised those chain stores whose purchases were made directly from the initial receivers 4/ in the terminal market. (The Cleveland

4/ Initial receivers represent those wholesalers who receive produce in carload lots. They break down the carlots into smaller units for sale to secondary handlers and to the larger retail stores - either local chains or independents.

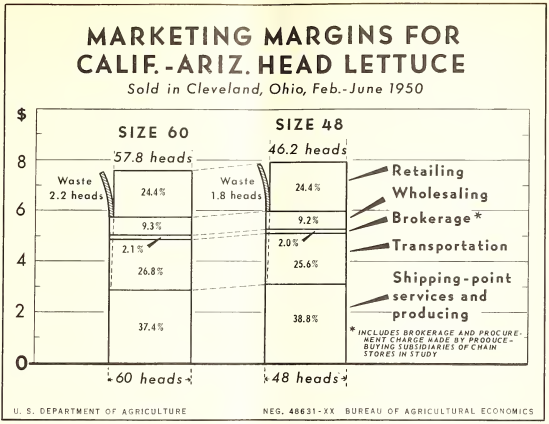

Figure 3.

Table 4. - Marketing margins for California-Arizona head lettuce sold in Cleveland, average, February-June 1950

Item	Price or margin			
	Size 48		Size 60	
	Actual	Percentage of retail price	Actual	Percentage of retail price
	Dollars	Percent	Dollars	Percent
Retail price	1/ 7.92	100.0	2/ 7.57	100.0
Retail margin	1.93	24.4	1.85	24.4
Price delivered retail store	5.99	75.6	5.72	75.6
Wholesale margin	.73	9.2	.70	9.3
Price f.o.b. car, Cleveland	5.26	66.4	5.02	66.3
Brokerage charge	.16	2.0	.16	2.1
Transportation charge	2.03	25.6	2.03	26.8
Price f.o.b. shipping point	3.07	38.8	2.83	37.4

1/ Retail price for 46.2 heads (48 heads - 1.8 heads waste).
2/ Retail price for 57.8 heads (60 heads - 2.2 heads waste).

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Table 5. - Lettuce, California-Arizona: Percentage and actual retail margin per head, in 20 retail stores grouped according to method of buying lettuce, Cleveland, by months, February-June 1950 1/

Size 48

Store group	Retail margin per head 2/											
	February		March		April		May		June		Average	
	Percent	Cents	Percent	Cents	Percent	Cents	Percent	Cents	Percent	Cents	Percent	Cents
Group I	14.8	2.2	18.7	2.5	18.8	2.9	25.4	5.0	26.4	4.5	22.0	3.7
Group III	28.4	4.4	28.5	4.5	27.8	5.0	25.8	5.5	27.2	5.0	27.5	4.8
Group IV	21.7	4.1	22.1	3.6	23.1	4.0	21.7	4.5	21.9	4.2	22.2	4.1
All stores	22.5	3.5	24.9	3.7	22.0	3.5	25.2	5.2	26.4	4.7	24.4	4.2

Size 60

Group I	20.9	2.4	21.3	2.4	18.4	2.2	23.0	3.7	25.6	3.5	22.1	2.8
Group III	31.3	4.7	31.0	4.0	31.4	5.2	32.3	5.1	44.2	6.0	32.1	4.8
Group IV	30.8	3.6	29.0	3.8	31.1	4.5	34.9	6.7	39.8	7.2	33.0	5.1
All stores	24.5	3.1	22.7	2.6	22.7	3.0	25.9	4.2	27.3	3.8	24.4	3.2

1/ Allowance made for waste and spoilage.
2/ Percentage margin shown as a percentage of retail selling price.

sample stores do not fit into this classification). Group III consisted of stores that bought their lettuce from both initial receivers and secondary handlers 5/, but had their own trucks for picking up their purchases of fresh produce. This included five medium-sized and large independently operated stores. Group IV included the nine independently operated stores that bought their lettuce delivered-at-store from service wholesalers 6/ and trucker jobbers. 7/

Group I stores - six chain-store units - averaged a 22-percent retail margin for size 48 and size 60 Western lettuce combined after considering waste and spoilage (table 5). This was equivalent to an actual margin of 3.7 cents a head for size 48 and 2.8 cents a head for size 60. For size 48 the margin ranged from 15 to 26 percent of the consumer's dollar from February through June 1950, while for size 60 the range was from 18 to 26 percent of the consumer's dollar. Group I stores accounted for 60 percent of the quantity of California-Arizona lettuce, sizes 48 and 60, sold by the sample stores. Of this total, approximately 58 percent was size 48. The average monthly selling price for group I stores was from 1 to 3 cents a head less than the average selling price for the other store groups, and for size 60 the difference in monthly selling prices was even greater. It ranged from less than 1 to more than 4 cents a head below the average selling price of the other groups.

Retail margins for group III stores - medium to large independents - averaged 27.5 and 32.1 percent of the consumer's dollar for sizes 48 and 60 respectively. For the 5 months this was equivalent to an actual margin of 4.8 cents a head for size 48 and size 60 combined. On a monthly basis, the percentage margin for size 48 showed little variation, but for size 60 the margin ranged from 31 to 44.2 percent of the consumer's dollar. This group handled about 34 percent of the number of heads sold in the sample stores. Of this total, 84 percent was size 48.

5/ Secondary handlers represent those wholesalers who buy produce from initial carlot receivers. They break down these purchases into smaller units for sale to retail stores. Secondary handlers may sell in less than crate lots to the smaller retail stores.

6/ Service wholesalers include initial receivers and secondary handlers who make deliveries to retail stores.

7/ Trucker jobbers represent wholesalers who sell only from their trucks, making deliveries direct to retail stores. They have no central business offices; they combine selling, delivery, and collection, in one operation.

The retail margin for lettuce sold by group IV stores - the smaller independent stores - averaged 22.2 percent of the consumer's dollar for size 48 and 33 percent for size 60. This was equivalent to 4.1 and 5.1 cents a head for sizes 48 and 60 respectively. For size 48 the percentage retail margin varied slightly during the 5-month period. However, for size 60, the average monthly margin ranged from 29 to 39.8 percent of the consumer's dollar. Group IV stores accounted for about 6 percent of the quantity of Western lettuce sold by the sample stores.

Retail margins for California-Arizona head lettuce in group I stores for the 5-month period were lower than the margins in any other store group. The average margin for size 48 in group I stores was about 1 cent a head lower than the margin for group III stores; and for size 60 the difference in margins was 2 cents a head. Group III stores averaged the highest retail margin per head for size 48 and group IV stores averaged the highest retail margin per head for size 60. The variation in retail margins between the two sizes among store groups is illustrated in figure 4.

Wholesale Margin

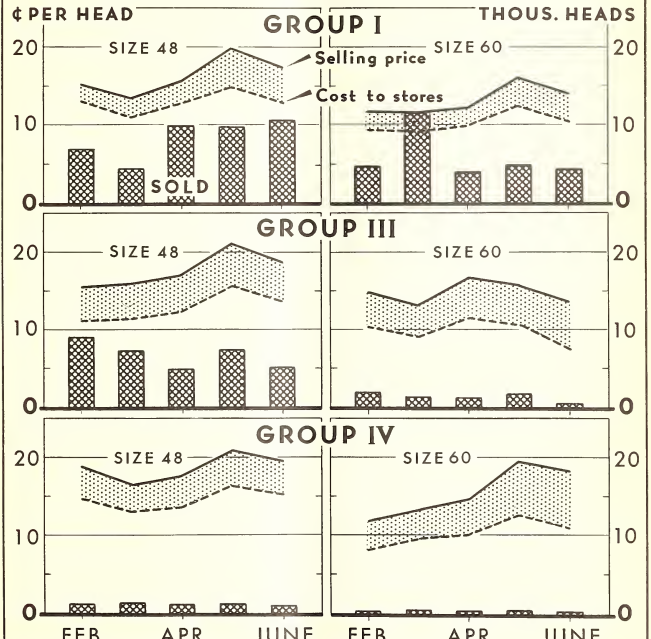
The average wholesale margin for size-48 Western lettuce was 73 cents a crate, or 9.2 percent of the consumer's dollar. For size-60 Western lettuce the wholesale margin averaged 70 cents a crate, or 9.3 percent of the consumer's dollar (fig. 3).

Of the 140 lots of Western lettuce traced through the wholesale market, 101 lots were sold directly to the retailers by initial carlot receivers and 39 lots were sold to secondary handlers who in turn sold to the retail stores included in the study. Wholesale margins varied according to the number of handlers involved.

Initial receivers charged an average of 50 cents a crate for the 140 lots sold to secondary handlers and to retail stores. On a monthly basis, this margin ranged from a low of 31 cents to a high of 66 cents a crate during the study. Secondary handlers took an additional margin of 85 cents a crate for the 39 lots that were sold through them. This amounted to a weighted average wholesale margin of 74 cents a crate for the 140 lots. This was the equivalent of 12.23 percent of the average wholesale selling price or the delivered-at-store price to the retailer for the lots traced to shipping point. When the 12.23 percent was applied to the delivered-at-store price for all lots of lettuce handled by the 20 stores during the 5 months for sizes 48 and 60 separately, it resulted in an average wholesale margin of 73 cents a crate for size 48 and 70 cents a crate for size 60.

RETAIL MARGIN AND SALES FOR CALIF.-ARIZONA HEAD LETTUCE

Sold in 20 Sample Stores Grouped According to Method of Buying Lettuce in Cleveland, Ohio, Feb.-June 1950



GROUP I, PURCHASE IN CARLOAD LOTS (CHAIN STORES); GROUP III, PURCHASE IN LCL, FROM INITIAL RECEIVERS AND SECONDARY HANDLERS (INDEPENDENT STORES); GROUP IV, PURCHASE IN LCL, FROM SERVICE WHOLESALERS AND TRUCKER-JOBBERS (INDEPENDENT STORES)

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Figure 4.

Of the 140 lots traced back to shipping point, 127 were bought by initial receivers on an f.o.b. shipping-point basis. Commission sales amounted to 8 lots and 5 lots were sold on a delivered-Cleveland basis. Percentagewise, 91 percent of the lots traced back to shipping point were sold f.o.b. shipping point, 6 percent on a commission basis, and 3 percent on a delivered-Cleveland basis. Although it is thought that a fairly representative sample of lots was selected for tracing back to shipping point, the proportions listed are not necessarily representative of the Cleveland wholesale market as a whole. Many factors were beyond the control of the enumerators in the field and this made it impossible to obtain these data for certain of the lots chosen for tracing through the wholesale market.

In general, initial receivers made their sales in units of not less than one crate. This was not true of secondary handlers and trucker jobbers; they sometimes sold as few as a half dozen heads to the smaller retail stores.

Brokerage Charge

Brokerage charges for California and Arizona lettuce averaged 2 percent of the consumer's dollar for size 48 and 2.1 percent for size 60. This is equivalent to an average of 16 cents a crate for both sizes on all lots traced back to shipping point. Of the 140 lots of California and Arizona lettuce traced back to shipping point, 86 lots reported a brokerage charge. This charge averaged 25 cents a crate for the 86 lots. Included in it was the procurement charges made by the produce-buying subsidiaries of the chain stores represented in the study.

Transportation Charge

The total charge for transporting Western lettuce from its shipping point to California and Arizona to the terminal market in Cleveland was $2.03 a crate. This represents 25.6 percent of the consumer's dollar for size-48 lettuce and 26.8 percent for size 60. A break-down of this margin into its component parts of freight, icing, and the Federal transportation tax is shown in table 6.

Shipping-point Services and Producer's Return

Since marketing charges for shipping-point services for lettuce 8/ were not available, margins for producer and shipping-point services cannot be separated in this study. The gross margin for both of these functions amounts to 39 percent of the consumer's dollar for size 48 and 37 percent of the consumer's dollar for size-60 lettuce. This is the equivalent of $3.07 per crate for size 48 and $2.83 per crate for size 60.

8/ Shipping-point services include trimming, grading, sizing, packing, package material, and selling.

Table 6. - Charge per crate for transporting Western lettuce from shipping point in California or Arizona to Cleveland, Ohio, February-June 1950 1/

Item	Charge per crate	
	Actual	Percentage of total
	Dollars	Percent
Freight	1.74	85.7
Icing	.23	11.3
Federal transportation tax	.06	3.0
Total	2.03	100.0

1/ Based on 140 lots followed from retail store to shipping point.

RETAIL PRICING POLICY

Pricing policies of the retailers apparently affected retail margins more than any other factor. Retail margins fluctuated considerably within individual stores as well as among stores. Whether to maintain a fixed selling price during a period of time, to adjust the selling price each time the wholesale price changed, or to adjust the selling price to meet competition, are decisions of pricing policy. All of these decisions cannot be discovered by measurement of margins taken, or by flexibility of the selling price. It is possible, however, to learn the results of such pricing practices as they are reflected in the margins taken by retailers for their services.

In general, the retail stores did not maintain a fixed selling price on California-Arizona head lettuce. Neither did they maintain a uniform percentage margin or a fixed dollars and cents margin. Groups of stores differed with respect to selling prices and margins taken (tables 12 and 13, Appendix).

Group I stores, which buy in carload lots, sold size-48 California-Arizona head lettuce at an average price of 16.7 cents a head from February through June 1950. This was 1 to 2 cents a head lower than the prices charged by groups III and IV stores (table 7). The selling price for California-Arizona lettuce in group III stores averaged 17.5 cents per head. Again the selling price was lower than the average for group IV stores. A similar pattern existed for size 60, with group I stores averaging the lowest selling price and group IV stores averaging the highest selling price for the 5-month period.

Percentage retail margins varied considerably among the store groups. Group I stores sold about half their volume at a margin of less than 25 percent of the consumer's dollar, while groups III and IV stores sold considerably less

Table 7. - Average retail price per head for sizes 48 and 60 California-Arizona lettuce, by stores grouped according to method of buying lettuce, Cleveland, February-June 1950

Item	Average retail price per head	
	Size 48	Size 60
	Cents	Cents
Group I	16.7	12.6
Group III	17.5	15.0
Group IV	18.5	15.4
All stores	17.1	13.1

than half at this margin. The relative volume of California-Arizona lettuce that each store group sold at a specified percentage margin is shown in table 8.

Group I stores handled almost two-thirds of their volume at a margin of less than 4 cents a head. During the same period, group III stores sold about 18 percent, while group IV stores sold around a third at this margin. The relative volume of California-Arizona lettuce sold by each group of stores at a specified margin is shown in table 9.

Most of the stores changed the price of lettuce during the period of the study. However, most of them apparently had no consistent policy with respect to flexibility of price. In general, as the wholesale price of head lettuce changed from week to week, most stores responded by adjusting their selling prices accordingly (fig. 5). However, most retailers were apparently reluctant to reflect the change immediately. One store maintained a constant selling price for size-48 head lettuce for 3 consecutive months, disregarding the changes in wholesale price (fig. 6). Each bar in figures 5 and 6 represents an individual lot or lots on sale in a retail store with a common selling price and cost price per head. The length of time the lot or lots were on sale governs the width of each bar.

Table 8. - Lettuce, California-Arizona: Percentage quantity sold at specified percentage margins, in 20 retail stores grouped according to method of buying lettuce, Cleveland, February-June 1950.

Gross margin as a percentage of retail price 1/	Percentage sold by store groups			
	I	III	IV	All stores
Percent	Percent	Percent	Percent	Percent
Less than 5	3.0	0.1	5.8	2.1
5 - 9.9	1.5	---	1.9	1.1
10 - 14.9	10.3	1.1	4.6	6.9
15 - 19.9	12.9	5.1	7.4	9.9
20 - 24.9	22.4	7.8	17.9	17.1
25 - 29.9	15.9	28.8	29.0	21.1
30 - 34.9	20.4	33.2	18.0	24.6
35 - 39.9	13.0	18.0	9.0	14.4
More than 39.9	.6	5.9	6.4	2.8
Total	100.0	100.0	100.0	100.0

1/ No allowance for waste and spoilage.

Table 9. - Lettuce, California-Arizona: Percentage quantity sold at actual dollar and cents margins, in 20 retail stores grouped according to method of buying lettuce, Cleveland, February-June 1950.

Gross retail margin per head 1/	Percentage sold by store groups			
	I	III	IV	All stores
Cents	Percent	Percent	Percent	Percent
Less than 1	4.1	0.1	5.9	2.9
1 - 1.9	13.8	.2	5.9	8.7
2 - 2.9	11.5	2.2	4.7	7.9
3 - 3.9	33.6	15.1	18.3	26.4
4 - 4.9	11.1	12.2	20.8	12.1
5 - 5.9	12.4	40.9	20.6	22.6
6 - 6.9	9.6	20.3	14.7	13.5
7 - 7.9	1.6	7.5	3.2	3.7
More than 7.9	2.3	1.5	5.9	2.2
Total	100.0	100.0	100.0	100.0

1/ No allowance for waste and spoilage.

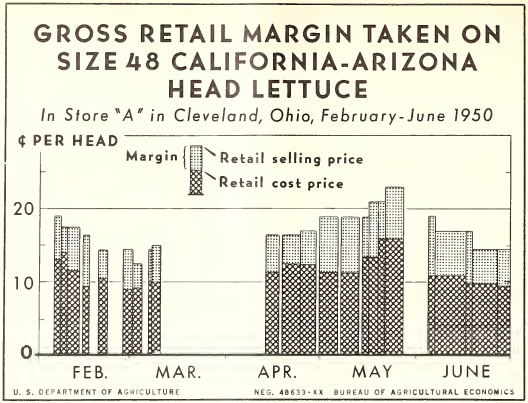

Figure 5.

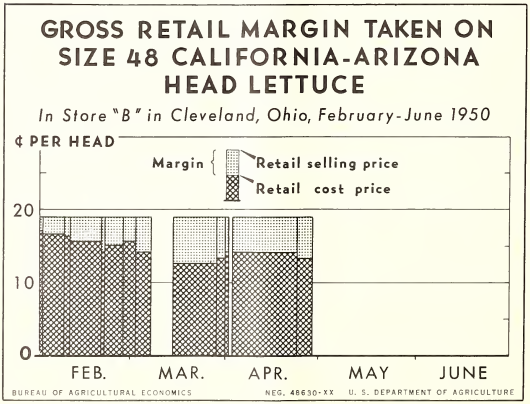

Figure 6.

APPENDIX

Scope and Method of Study

A sample of retail stores within the corporate limits of Cleveland was selected to provide representative retail prices for all stores having $35,000 yearly sales or more. 9/ Complete information was obtained on each lot of lettuce delivered to each store in the sample from February through June 1950. This information included size, State of origin, brand, method of sale, type of container, cost price, from whom purchased, selling price, waste, and quantity sold.

A sample of the lots of lettuce for which this retail information was obtained was selected for tracing back through wholesale handlers to f.o.b. shipping point. Information was obtained from each handler on the specific sample lot with respect to price paid for the lot, quantity purchased, date of purchase, services performed, selling price, and name of seller from whom the lot was bought. In this way, a complete picture was obtained for each lot in the sample on the marketing channel; and the price and margin were obtained at each point in the marketing process.

An attempt was made to obtain prices at uniform points in the marketing process. This is particularly important with respect to retail margins. The point in the marketing process at which retail stores take title to lettuce may range all the way from the car door at terminal market to the time the lettuce is delivered at retail stores. When retail stores take title at car door their reported margin includes some of the expenses of the wholesale service such as loading the truck, warehousing, delivery to retail stores, and unloading at retail stores. The retail margin as herein defined includes only the services provided after the lettuce has been delivered to the store. To make retail margins on lettuce comparable among the various stores the crate costs reported by the stores were adjusted to a delivered-at-store basis. An adjustment in cost was required only in the case of the chain stores. Adjustment data obtained from the chain stores in the Pittsburgh study were applied to the Cleveland chain-store data to arrive at a delivered-at-store price. This was done separately for each chain.

The 20 sample retail stores were separated into 3 groups depending on the method of buying lettuce. Group I consisted of those stores whose purchases were made predominantly in carload lots. This group included 6 chain store units. Group II comprised those chain stores whose purchases were made directly from the initial receivers in the terminal market. (The Cleveland sample stores do not fit into this classification). Group III was comprised of stores that bought their lettuce from both initial receivers

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9/ The data on number of heads sold may not necessarily be representative for the city. A larger number of stores would have been required to insure representativeness for quantity data than for price data, because the variation found in store prices is less than the variation among stores in the number of heads sold.

and secondary handlers but picked up their purchases of fresh products in their own trucks. This included 5 medium-sized and large independently operated stores. 10/ Group IV included 9 independently operated stores that bought their lettuce delivered-at-store from service wholesalers or trucker jobbers.

In this study, the retail margin represents the difference between the realized retail selling price of a crate (after allowing for loss from waste and spoilage) and the cost of a crate to the retailer delivered-at-store. The wholesale margin represents the difference between the delivered-at-store price of a crate and the cost of a crate to the initial carlot receiver based upon a full car or truck load laid down at the terminal market in Cleveland. The transportation margin represents the difference between the price of a crate laid down at Cleveland and the f.o.b. shipping-point price of a crate, excluding any brokerage charges. The margin for shipping-point services and grower's return is a residual figure obtained by subtracting the average marketing charges from the retail selling price obtained in Cleveland. Retail prices were weighted by the relative sales volume obtained from the sample stores.

10/ Independently operated stores in group III do not obtain any price reduction from the wholesaler as a result of hauling the produce to their stores, but they may receive some price concession on the basis of the number of crates purchased. These stores may gain some advantage in quality of purchases as a result of picking up their produce in the terminal market. There was no practical way to make such a quality comparison in the Cleveland study.

Table 10. - Test of significant difference between monthly selling price for California and Arizona head lettuce, size 48, sold in 20 sample retail stores in Cleveland, February-June 1950

Month	Retail price per head 1/		Difference	d^2
	California	Arizona	d	
	Cents	Cents	Cents	
February	16.3	20.6	4.3	18.49
March	14.9	16.1	1.2	1.44
April	17.7	16.1	-1.6	2.56
May	20.6	20.4	- .2	.04
June	18.3	20.6	2.3	5.29
Total	87.8	93.8	6.0	27.82
Mean	17.6	18.8	1.2	

$$ss = \Sigma d^2 - \frac{(\Sigma d^2)}{n} = 27.82 - \frac{(6.0)^2}{5} = 20.62$$

$$s^2 = \frac{ss}{4} = \frac{20.62}{4} = 5.16$$

$$s = \sqrt{s^2} = \sqrt{5.16} = 2.27$$

$$s_{\bar{x}} = \frac{s}{\sqrt{n}} = \frac{2.27}{\sqrt{5}} = 1.01$$

$$t = \frac{\bar{x} - 0}{s_{\bar{x}}} = \frac{1.2}{1.01} = 1.19 \quad 2/$$

Entering table of "t" at 4 degrees of freedom,
5 percent level, t = 2.78
1 percent level, t = 4.60

1/ Simple average of the weighted average selling price of each store group used to eliminate the effect of differences between store groups in the number sold.

2/ No significant difference was found between retail prices of California and Arizona head lettuce, size 48.

Table 11. - Test of significant difference between monthly selling price for California and Arizona head lettuce, size 60, sold in 20 sample retail stores in Cleveland, February-June 1950

Month	Retail price per head 1/		Difference d	d^2
	California	Arizona		
	Cents	Cents	Cents	
February	11.5	13.8	-2.3	5.29
March	12.5	13.0	- .5	.25
April	16.2	13.3	2.9	8.41
May	18.1	15.2	2.9	8.41
June	15.1	14.5	.6	.36
Total	73.4	69.8	3.6	22.72
Mean	14.7	14.0	.7	

$$ss = \sum d^2 - \frac{(\sum d)^2}{n} = 22.72 - \frac{(3.6)^2}{5} = 20.13$$

$$s^2 = \frac{ss}{4} = \frac{20.13}{4} = 5.03$$

$$s = \sqrt{s^2} = \sqrt{5.03} = 2.24$$

$$s_{\bar{x}} = \frac{s}{\sqrt{n}} = \frac{2.24}{\sqrt{5}} = 1.00$$

$$t = \frac{\bar{x}-0}{s_{\bar{x}}} = \frac{.7}{1.0} = .70$$

Entering table of "t" at 4 degrees of freedom,
5 percent level, t = 2.78
1 percent level, t = 4.60

1/ Simple average of the weighted average selling price of each store group used to eliminate the effect of difference between store groups in the number sold.

2/ No significant difference was found between retail prices for California and Arizona head lettuce, size 60.

Table 12. - Lettuce, California-Arizona, Size 48: Quantity sold, retail price, and gross margin per crate, in 20 retail stores grouped according to method of buying lettuce, Cleveland, by months, February-June 1950

Item	Sales		Price of a crate			Gross margin as a percentage of retail price
	Quantity	Percentage of total	Retail 1/	Cost 2/	Gross margin	
	Heads	Percent	Dollars	Dollars	Dollars	Percent
ebruary						
Group I	6,876	41.0	6.98	5.95	1.03	14.76
Group III	8,871	52.8	7.14	5.11	2.03	28.43
Group IV	1,039	6.2	8.65	6.77	1.88	21.73
All stores	16,786	100.0	7.17	5.56	1.61	22.45
arch						
Group I	4,332	33.7	6.14	4.99	1.15	18.73
Group III	7,310	56.8	7.34	5.25	2.09	28.47
Group IV	1,218	9.5	7.57	5.90	1.67	22.06
All stores	12,860	100.0	6.95	5.22	1.73	24.89
pril						
Group I	9,831	61.8	7.19	5.84	1.35	18.78
Group III	4,907	30.9	7.80	5.63	2.17	27.82
Group IV	1,161	7.3	8.09	6.22	1.87	23.11
All stores	15,899	100.0	7.44	5.80	1.64	22.04
lay						
Group I	9,798	53.6	9.18	6.85	2.33	25.38
Group III	7,452	40.7	9.77	7.25	2.52	25.79
Group IV	1,045	5.7	9.64	7.55	2.09	21.68
All stores	18,295	100.0	9.44	7.06	2.38	25.21
une						
Group I	10,643	64.2	7.96	5.86	2.10	26.38
Group III	5,019	30.3	8.58	6.25	2.33	27.16
Group IV	916	5.5	8.94	6.98	1.96	21.92
All stores	16,578	100.0	8.21	6.04	2.17	26.43
eb. - June						
Group I	41,480	51.6	7.71	6.01	1.70	22.05
Group III	33,559	41.7	8.08	5.86	2.22	27.48
Group IV	5,379	6.7	8.53	6.64	1.89	22.16
All stores	80,418	100.0	7.92	5.99	1.93	24.37

1/ Amount retailer realized after allowing for waste and spoilage. Weighted average selling price can be obtained by dividing retail price for a crate by 46.2 heads.
2/ Cost delivered at store.

Table 13. - Lettuce, California-Arizona, Size 60: Quantity sold, retail price, and gross margin per crate, in 20 retail stores grouped according to method of buying lettuce, Cleveland, by months, February-June 1950

Item	Sales		Price of a crate			Gross margin as a percentage of retail price
	Quantity	Percentage of total	Retail 1/	Cost 2/	Gross margin	
	Heads	Percent	Dollars	Dollars	Dollars	Percent
February						
Group I	4,771	70.2	6.69	5.29	1.40	20.93
Group III	1,848	27.2	8.62	5.92	2.70	31.32
Group IV	174	2.6	6.75	4.67	2.08	30.81
All stores	6,793	100.0	7.22	5.45	1.77	24.52
March						
Group I	11,459	87.3	6.57	5.17	1.40	21.31
Group III	1,271	9.7	7.49	5.17	2.32	30.97
Group IV	396	3.0	7.65	5.43	2.22	29.02
All stores	13,126	100.0	6.69	5.17	1.52	22.72
April						
Group I	3,950	72.9	6.94	5.66	1.28	18.44
Group III	1,156	21.3	9.59	6.58	3.01	31.39
Group IV	311	5.8	8.43	5.81	2.62	31.08
All stores	5,417	100.0	7.59	5.87	1.72	22.66
May						
Group I	4,868	71.5	9.22	7.10	2.12	22.99
Group III	1,618	23.7	9.06	6.13	2.93	32.34
Group IV	327	4.8	11.14	7.25	3.89	34.92
All stores	6,813	100.0	9.28	6.88	2.40	25.86
June						
Group I	4,449	90.8	7.96	5.92	2.04	25.63
Group III	289	5.9	7.80	4.35	3.45	44.23
Group IV	164	3.3	10.52	6.33	4.19	39.83
All stores	4,902	100.0	8.03	5.84	2.19	27.27
Feb. - June						
Group I	29,497	79.6	7.29	5.68	1.61	22.09
Group III	6,182	16.7	8.65	5.87	2.78	32.14
Group IV	1,372	3.7	8.89	5.96	2.93	32.96
All stores	37,051	100.0	7.57	5.72	1.85	24.44

1/ Amount retailer realized after allowing for waste and spoilage. Weighted average selling price can be obtained by dividing retail price for a crate by 57.8 heads.

2/ Cost delivered at retail store.

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